

Ken INOUE*: Notes on Asiatic species of *Platanthera*
(Orchidaceae) (2) *Platanthera minutiflora*
and *P. albo-marginata***

井上 健*: ラン科ツレサギソウ属の分類学的研究
(2) *Platanthera minutiflora* と *P. albo-marginata*

3) *Platanthera minutiflora* Schltr. (Fig. 1)

This species was described by Schlechter in 1924 and has been little investigated since then. Original description on the column structure was incomplete and Schlechter's opinion about the relationships between this species and other species seemed somewhat unreliable. The author had the opportunity to investigate several specimens of this species including the type materials and could investigate the column structure in detail. Here, the detailed structure in the column is described and the relationships are suggested.

Description. Plant 15-23 cm tall; rhizome short, new shoot growing near the old stem; tuber slender, rook-like; two sheaths at the base of the stem. Leaves two; lower one much larger, petiolating into the upper sheath, oblanceolate to elliptic, obtuse, 5-12 cm long, 1.2-2.5 cm wide; upper one much smaller, bract-like. Inflorescence equaling the pedicel with ovary, c. 10 mm long. Flower c. 4 mm in across; middle sepal concave, cordate, obtuse, c. 2.0 mm long, c. 2.7 mm wide, 3-nerved; lateral sepals patent, obliquely oblong-lanceolate, obtuse, c. 2.7 mm long, c. 1.1 mm wide, 1(-3)-nerved; lateral petals connivent with middle sepal, obliquely ovate, acute, c. 1.6 mm long, c. 0.9 mm wide, 1-nerved; lip lightly reflexed, oblong, obtuse, c. 2.7 mm long, c. 1.0 mm wide, 3-5-nerved; spur conical, c. 1.4 mm long, c. 1.2 mm broad. Column c. 1.2 mm long, c. 1.5 mm broad; anther connective c. 1.0 mm wide; anther locules parallel to each other; pollinarium c. 1.1 mm long; caudicle c. 0.4 mm long; viscidium naked, sub-orbicular, c. 0.3 mm in across; rostellum well developed, V-shaped; style tissues supporting lateral stigmas somewhat protruding and stigmas protruding anteriorly.

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** Continued from Journ. Jap. Bot. 61: 193-198, 1986.

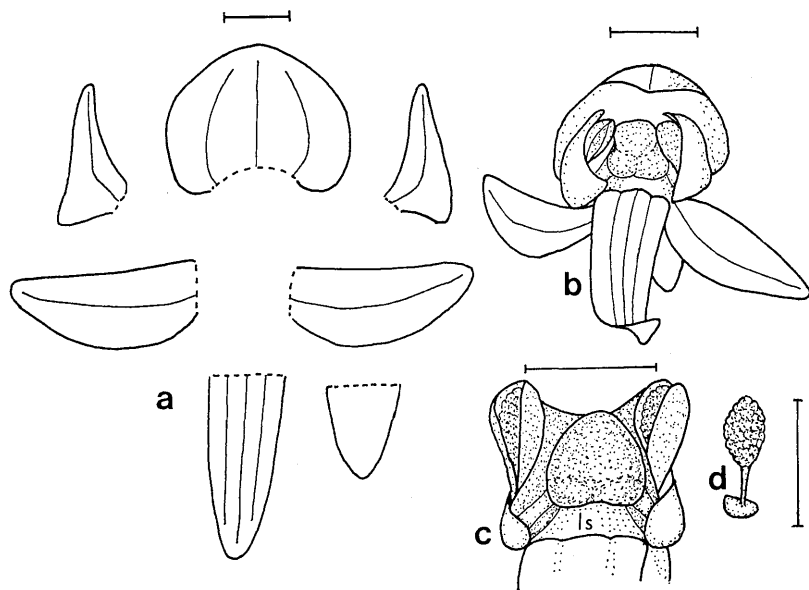


Fig. 1. *Platanthera minutiflora* (H. Smith 3724, W12619, Type). a. perianth segments; b, front view of flower; c, front view of column; d, pollinarium. ls, part of style tissues under lateral stigma lobes. Scale, 1 mm.

This species has the following characteristics: 1) part of style tissues under lateral stigma lobes protruding and thus stigmas protruding anteriorly; 2) short spur of less than 2 mm; 3) petiole of the largest leaf extending from the sheath at the stem base; 4) root-like slender tuber. Schlechter suggested that this species is related to *P. obtusata* Lindl., probably based on the resemblance of vegetative features. However, both species differ in column structure; *P. obtusata* has concave stigmatic surfaces and *P. minutiflora* has convex ones. The above mentioned characteristics of *P. minutiflora* are also found in *Platanthera brevicealcarata* Hayata in Japan and Taiwan and suggest the close relationship between the two species. Somewhat differentiated shapes of middle sepal and lateral petal in *P. minutiflora* indicate that this species is more specialized than *P. brevicealcarata*.

Platanthera minutiflora Schltr. in Act. Hort. Goth. 1: 138 (1924).

Specimens examined: China, N. Szechuan, Dongrego (H. Smith 3724, W 12619, Type & E, Isotype); Yunnan, Y. Teching, Paimashan (T.T. Yu 8769,

YUN).

4) *Platanthera albo-marginata* (King et Pantl.) Kraenzl. (Fig. 2)

This species has a specialized structure in column and is worth describing.

Description. Plant 5-7 cm tall; rhizome short; tuber subglobose, 3-5 mm in diameter. Leaves two, subopposite, elliptic, 15-20 mm long. Inflorescence c. 1 cm, somewhat densely 2-4(-10)-flowered, bract very small, scaly; pedicel with the ovary c. 5 mm long. Flowers 5-6 mm in across; middle sepal ovate, 1-3-nerved, c. 3.5 mm long, c. 2.5 mm wide; lateral ones patent, obliquely oblong, 1-nerved, c. 5.0 mm long, c. 2.9 mm wide; petals erect to and much smaller than the middle sepal, obovate, 3-nerved, c. 2.3 mm long, c. 1.8 mm wide; lip protruded forwardly, deeply 3-lobed, c. 4.0 mm long, c. 2.5 mm wide; mid-lobe narrowly deltoid, 3-nerved, c. 3.5 mm long, c. 1.0 mm wide; lateral ones narrowly deltoid, 1-nerved, c. 2.0 mm long, 0.5 mm wide; spur cylindric, c. 2 mm long.

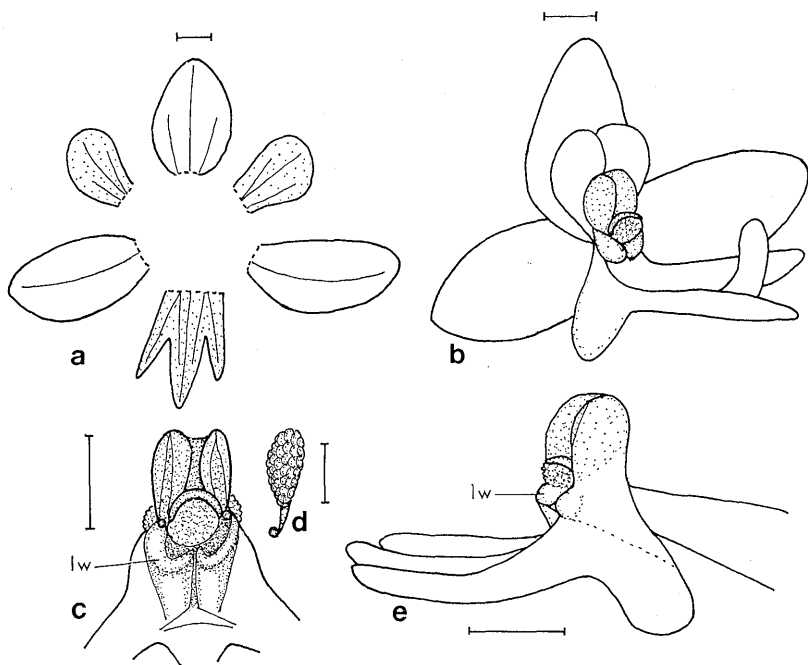


Fig. 2. *Platanthera albo-marginata* (Ludlow, Sherriff & Hicks 19304, E). a. perianth segments; b. lateral view of flower; c. front view of column; d. pollinarium; e. lateral view of column. lw, lateral walls of column. Scale, 1 mm.

Column c. 2 mm long and c. 1.5 mm broad; rostellum moderately developed, V-shaped; stigmatic surface flat; anther locules keeping contact with each other and somewhat divergent at the bases; pollinarium c. 1.8 mm long; caudicle c. 0.3 mm long; viscidium naked, suborbicular, c. 0.1 mm in diameter.

The specialized structure of *P. albo-marginata* is observed in the lateral walls of column (Fig. 2, 1w). They are well developed, strongly incurved keeping contact with each other, surrounding the stigmas and forming two shallow hollows under the lateral stigmas from the facial view; the basal ends of lateral walls of column extend into the orifice of the spur and form the upper roofs of the spur. This structure was not described in the original description by King & Pantling (1898), and it seems that they considered the lateral walls of column as parts of staminodes. The function of this column structure is not certain at present; however, the structure can be a particular adaptation for a certain mode of pollination as well as specialized shape and color of petals and lip.

This species is sometimes placed under the genus *Habenaria* and sometimes under the genus *Platanthera*, and it is necessary to discuss the generic position of this species. The three stigmatic lobes form a conjoined plane, which gives a basis to treat it under *Platanthera*, but it also has a subglobose subterranean organ and a trilobed lip, which may support the view to place it under *Habenaria*. Although the recognition and definition of *Platanthera* and allied genera do not agree among the orchid taxonomists at present, my tentative proposal is that *Platanthera* has conjoined stigmas and *Habenaria* has two separate stigma lobes.

Platanthera albo-marginata (King et Pantl.) Kraenzl., Orch. Gen. Sp. 1: 939 (1901).—*Habenaria albo-marginata* King et Pantl. in Ann. Roy. Bot. Gard. Cal. 8: 322 (1898).

Specimens examined: Bhutan, Tsampa (Ludlow, Sherriff & Hicks 19304 & 19413, E); Bhutan, Tinper (R.E. Cooper 1979, E).

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Platanthera minutiflora は類縁関係など不明な点の多い種である。今回、ずい柱の詳細な構造を調べることができたので報告する。ずい柱は Fig. 1 に示したように、側方の柱頭の下の花柱が前方に突き出ており、そのため、柱頭が突き出ている。この特徴やその他の特徴もニイタカチドリと共通であり、両者の類縁を示唆している。

P. albo-marginata のずい柱を観察したところ、興味深い構造が見いだされたので報告する。この種の柱頭は、一見、突き出ているように見えるが、これはずい柱の側壁が

非常によく発達し、柱頭のまわりを取り巻いているためである。このずい柱の構造は、花粉媒介昆虫との特殊化したポリネーションのモードを予想させる。

□ Klucking, Edward P.: **Leaf venation patterns Vol. 1. Annonaceae** 256 pp., 140 pls. 1986. J. Cramer, Stuttgart. DM 220. 著者はカリフォルニア大学の古植物研究者である。植物葉の遺体の同定には葉脈の細部のボタンが有力な形質として用いられ、系統論にも利用される。これは古植物にかぎらず、われわれが葉一枚でもその種を同定できるのは、葉脈ボタンの情報が大きい寄与をしていることは疑いない。その基礎資料として現生種の葉脈標本 (Cleared-leaf specimen) の作成と蓄積が行われている。本書は葉脈ボタンのモノグラフを意図するもので、Annonaceae の 128 属のうち 104 属の記述と葉脈の写真がのせられている。記述は属単位で、Predominant venation pattern, Description, Representative species, Comments の項に分けてある。「葉脈は正確な計測や記述がやりにくいものの一つである」と書いてあるとおり、Description は苦心の作だろう。Comment は属の特徴となる形質について特記したものである。Predominant venation pattern は葉の生長段階を 1. 頂端生長の盛んな段階、2. 支脈を出して横方向に発達する段階、3. 細脈を形成して完成する段階に分け、どの段階が成葉のボタンにどの程度かわかるかを短く述べたものである。Annonaceae はわが国のフロラにはほとんど関係ないが、海外調査研究、系統論などには有用であるし、このシリーズの先行きによっては分類学、形態学研究室には必備のものとなるだろう。タイプオフセット印刷で、こういう本の出版のむずかしさが感じられる。序文によると著者は 10 年の勤務に対して一年間与えられる sabbatical year を 2 回利用して、欧州の標本室で本書に関する研究をしたそうで、日本のわが身の環境とくらべてうらやましいことである。またわが国でもこの種の研究は古生物学者が精力的にやっているのに、分類や形態の研究室では周囲の雰囲気によってやりにくい傾向があるように見受けられるのは残念である。現在やっておられる方々は、あきらめないで押し通してもらいたい。

(金井弘夫)

□ 訂正 本誌 62 巻 10 号 22 頁所載の文献紹介、進野久五郎植物コレクションの収載誌名および発行機関の記述に誤りがありましたので、下記のとおり訂正します。

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